DOCUMENT RESUME

ED 174 136 HE 011 540

AUTHOR Lutz, Frank W.; Dow, Teri Goodall
TITLE National Departmental Recognition and Critical Mass.
PUB DATE Apr 79
NOTE 27p.

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS *College Faculty; Departments; Doctoral Degrees; *Doctoral Programs; Educational Administration; Educational Anthropology; Educational Economics; *Educational Quality; Enrollment Rate; Graduate Professors; *Graduate Study; Higher Education; *Professional Recognition; Programs; Status

ABSTRACT

The issue of national recognition for graduate academic departments is discussed with specific reference to educational administration programs. A sample of 47 educational administration departments that hold membership in the University Council for Educational Administration were surveyed. A conceptual approach based on anthropological studies was employed to determine which programs were accorded national recognition and why, and how important this recognition was considered to be. Variables investigated to determine the top ten educational administration programs included: publications, distinguished faculty members, enrollment, number of courses taught, number of full-time faculty, number of masters students, number of doctoral students in residence, department emphasis, faculty salary range, and total number of doctoral students. The importance of distinguished faculty members in attracting national recognition to a program is emphasized. While it is suggested that national recognition may not guarantee a profitmaking program, it does appear to be worth the financial investment required. Appended are the survey model and tabulated results. (SF)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

NATIONAL DEPARTMENTAL RECOGNITION AND CRITICAL MASS

by

Frank W. Lutz
The Pennsylvania State University

and

Teri Goodall Dow
Intermediate Unit #5, Edinboro, PA

ED174136

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Frank W. Lutz

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Introduction

For some time the question of national recognition of academic programs and departments has been a concern of funding agencies, prospective employers, students, scholars, accrediting agencies, and also internal decision makers in individual higher education institutions (See: Hughes, 1925 and 1934; Keniston, 1959; Cartter, 1966; Roose and Anderson, 1970; Hagstrom, 1971; Higgins, 1971; Coleman, 1973; House, 1974; Dolan, 1976). Some applaud it and seek it, others criticize it and disdain it, some do the ranking others benefit from the ranking done. This study chose to limit itself to the study of national recognition in one area, educational administration. Further, it chose to limit its scope to programs which were members of the University Council for Educational Administration (UCEA). These choices were made in order to limit extraneous variables that may be introduced due to differences in disciplines, the lower limits of resources in very small programs, and the amount and kind of communication among programs themselves. By limiting this investigation to UCEA programs we were assured of (1) a standard minimum commitment of institutional resources; (2) single type of academic program; (3) a network of communication among programs (at least at a

HE 011 540

minimum level) provided by such UCEA activities as professional seminars, publications, regular national meetings; and (4) a full time professional staff, representing all member programs, who engage in periodic visits to all member programs.

Purpose

It was assumed that the question of national recognition is of concern to all programs of educational administration either because they seek it or disdain it; have it or do not. Further, it was assumed that given the presumed benefits accrued by those programs which have attained national recognition, university administrators would benefit from a knowledge of those correlates (called here critical mass) which account for national recognition. Such a knowledge, it was assumed, would permit more rational resource allocation if an institution were to make a decision to seek national recognition and would also provide a data base for making assumptions about the benefits that might be expected if one attained it. This research therefore sought to: (1) identify the ten programs in educational administration from among the 47 UCEA programs which were recognized by the member institutions as the top ten, (2) identify those program and resource variables that could distinguish between the top ten and bottom ten programs; and (3) account for the largest amount of variance in national recognition among programs. No effort is made to argue that national reputation is actually reflective of "the best" programs, or that one should seek national recognition, or that those who believe it to be unimportant or even immoral are correct or incorrect.

Conceptual Approach

At the outset it was felt that some effort at a conceptual approach to explanation as opposed to "random-empirical" approach would be most useful. Therefore some discipline oriented model of explanation or prediction was sought and adopted, and the approach of using a multivariant "best fit" of an assortment of the largest possible number of independent variables with the dependent variable (national recognition) was rejected.

Specifically a model was selected from the work of Barlett (1977) based on findings of Ortis (1967) and related to other work by Schultz (1964), Firth (1969), Johnson (1971) and Cancian (1972). All of these studies are categorized as anthropological studies of agricultural economy in rural societies. Barlett examined the conditions of crop decisions made by family farmers in Paso, Costa Rica. Decisions requiring various risk-payoff relationships confronted Paso farmers. Eliminating the decision requiring extreme wealth three decisions were open to all farmers. (1) coffee (low risk-low payoff), (2) rotation of corn and beans (medium risk-medium payoff), and (3) rotation of tobacco with corn and beans (high risk-high payoff possible). In addition to the risk the third option required considerably more hard work on the part of the farming family as only tobacco required terracing of the steep slopes found in Paso. Barlett considered numerous economic and resource variables (including the size of family and availability of land use) in attempting to account for the type of decision made. The single indicator that accounted for more variance in the crop decision was the existence of "one strong male" in the family. In other words regardless of the size of the family

or their other resources, they were much more likely to plant tobacco if there was "one strong male" in the family who could undertake the difficult task of terracing. Figure 1 depicts this model.

Enter Figure 1 About Here

Turning to the notion of departmental national recognition we assumed that the risks and profits of national recognition were similar to the risks and profits of the cash crop (tobacco planting) and the hard work of terracing could be likened to the task of research and publication. Further, we speculated that the "one strong male" in the family variable in the Paso study might be likened to a nationally recognized "great person" on the faculty of a program. If these speculations were correct then the existence of a "great person" on the faculty would account for a large amount of variance in national recognition. Rejecting the notion regarding "critical mass" in higher education which holds that a "critical" number of faculty in an area is required in order to accomplish "great things" (see Jencks and Riesman, 1968, p. 527; and Hartman, et.al., 1969, p. 97) it was predicted that the existence of "one great person" would account for more variance in national recognition than would size of faculty and that "critical mass" would be better defined as a number of related variables as opposed to the single variable of faculty size. If these predictions were confirmed it was assumed that the individual components related to professors identified as "great persons" would be critical to the study. With such a model and assumptions in mind the study was undertaken.

Figure 2 depicts our application of Barlett's model to national recognition.

Enter Figure 2 About Here

Sample and Method of Study

The population studied included all 47 educational administration programs having UCEA membership during 1978. Questionnaires were sent to program representatives (PRs) in each of the 47 programs. Data were solicited concerning (1) their perception of the rank of each of the 47 programs.* Data were also solicited regarding great persons. Thus both national recognition and great persons are established in this study based on reputational methods. Ninety-two percent of the UCEA representatives participated in these reputational identifications. Departmental data were secured from 87 percent of the population including all programs ranked in the top ten. Questionnaires soliciting data about great persons were sent to the twenty professors receiving the greatest number of votes as great persons (any number of persons could have been chosen as a great person by any one respondent). All twenty returned usable and complete data.

Findings

Both regression and discriminate analysis techniques were used to analyze the data. The findings will be presented under four

*Information regarding such ranking was also solicited from the UCEA director and associate directors. All of these but two associate directors responded and became part of the national recognition data.

headings: (1) program discrimination, (2) maximum accountable variance, (3) program-person output, and (4) great person description.

Program Discrimination

In order to determine the variables that distinguished between the top ten and bottom ten programs, as identified by the reputational approach described, a discriminate analysis was performed. The use of but two variables classified correctly 100 percent of the cases. These were (1) Number of publications represented on the total faculty and (2) Number of great persons on the faculty (1 or more). These two variables were selected using a separate linear combination of discriminating variables for each group (top ten and bottom ten) producing a probability of membership in the respective groups. This program selected from among ten possible variables previously selected as producing the largest possible discriminate function. Those ten variables included: publications, great persons, enrollment, number of courses taught, number FTE faculty, number Masters students, number Doctoral students in residence, department emphasis (research, teaching, service), faculty salary range, total number of doctoral candidates. These ten variables developed a maximum discriminate function producing a Wilk's Lamba of .0415 (an indicator of the separation of the means of the two groups, where the smaller the Lamba, the greater the significance), and a Chi square function of 41.36 with 10df; both significant beyond .01. Another evidence of the disciminatory power of the variables was the calculation of the group centroids (a measure of the separate group plots) which were .954 for the top ten and -.954 for the bottom ten. A final measure of the significance of the discriminatory

power was the calculation of a canonical correlation between the variables selected and the rank of the programs, producing a canonical correlation of .98, significant beyond .01.

Maximum Accountable Variance

It was decided to attempt to determine which variables, from among the original 17*, could account for the maximum amount of variance in national recognition (requiring that each additional variable result in a larger R^2 and also contributed to an additional significant amount of the total accountable variance. A step-wise multi-variant design was selected which entered variables one by one according to the amount of variance it accounted for in the dependent variable. Table I indicates the variables in the order of entry, the R, R^2 and Beta weight of each variable at step 7.

Table I About Here

As seen in Table I a multiple R of .93, accounting for 86% of the variance in the national recognition rankings was produced. Of considerable interest to our later discussion of these findings is the fact that the variable "number of FTE faculty" had the only negative** relationship in the equation. That is, once the minimum number of FTE faculty was accomplished (only one of the 47 UCEA programs reported less than six FTE faculty members) increasing the size of the faculty appears to be counter-productive.

*These are reported in Appendix A.

**The negative beta weight indicates a positive relationship between the variables, (i.e., the higher the rank the greater the number of faculty publications, etc.) because the higher the rank the smaller the rank number (i.e., 1 highest to 47 lowest rank).

Program-Person Output

It was argued in the beginning, and supported by the literature, that while certain variables ought or might contribute to national recognition others should result from having achieved such a status. Like profit results from planting tobacco in Paso but "one strong man" accounts for its planting, it was suggested that the influx of grant money would result from the attainment of national recognition but "great persons" would account for the recognition. Thus we argued that there should be a high zero order correlation between national recognition and the amount of grant money received by the 47 programs during the last five years. Upon inspection of the variables, another variable (great person) was obviously important to consider. Table II describes these data.

Enter Table II About Here

While all correlations in Table II are significant, and it would have been simple enough to indicate that our guesses concerning national recognition were confirmed, that seems neither sufficient nor totally correct. To begin with, national recognition and great persons are themselves related. Thus what is related to one may well be related to the other. The problem becomes which is the stronger and which the weaker (if not spurious) relationship. While rejecting the descriptor spurious a straight forward rational and statistical approach seems reasonable, each producing congruent explanations. One might argue that a great person might alone attract research monies wherever that person is located. On the other hand the institutional investment of training grants, one would presume, goes most reasonablt to nationally recognized programs as opposed to single "great persons." And that is exactly how

the data fell. While each is significantly related to each other, great persons is more highly related to research grants and nationally recognized programs is more highly related to training grants. Thus one might conclude that attracting a great person may in the short run obtain research money. Nationally recognized programs, however, will attract the training grants while their great persons may also attract the research grants. Table II demonstrates that the higher relationship with research grants is with great persons and the higher relationship with training grants is with national recognition -- exactly as expected.

Great Person Description

If a great person is the primary component of a nationally recognized program then it seems helpful to be able to describe the elements that go into making a great person. Appendix B provides such a description based on our data. The age range of the twenty great persons was considerable (40-71). Also we were surprized at the considerable range in the number of their total publications during the last five years (i.e., 4-61). Based on the inspection of primary data, it seems that some great persons, who had published earlier and some now in more advancing years are devoting their time to other activities (see Table IV). There are also three great persons who have major administrative responsibilities which probably limits rather severely the time they can devote to research and publication. Taking these things into consideration it would appear that most great persons are currently active in research and publication, attend two or more professional meetings per year, teach a limited number of courses per year (between three and four per academic year), and are serving as

chairpersons on five to eight doctoral dissertations. Additionally they are in their middle 50's, received their terminal degree in their early 30's and have been in their present positions about ten years. Thus one might conclude that it takes about twenty years to be recognized as a great person (in educational administration) and one might be advised to spend about one half that time at a single institution, thus the benefits of great person accrue not only to the person but also the institution.

Tables III and IV describe the type of degrees held by the great persons and the activities in which they report spending their time.

Enter Tables III and IV About Here

At the outset we were concerned with identifying the variables that could account for or discriminate between programs identified as being nationally recognized as top programs in educational administration and those not so identified. We were concerned with the concept of critical mass and the fact that, in higher education, this had often been described soley as the number of FTE faculty in a program. Rejecting that notion of critical mass we suggested that Barlett's concept of "one strong man", described here as "great persons", would be a more critical factor than simply the size of faculty. Our data confirm these original speculations. Not only was "great persons" highly related to national recognition but the absolute size of the program faculty was negatively related to national recognition. It is noted that all 47 programs (except one ranking in the middle 20s) reported at least six FTE faculty. Of course it is possible that the relationship is actually curvalinear. A program could perhaps be too small, less than six faculty, thus preventing national recognition.

As our sample was limited (only one had less than six FTE faculty) that possibility was not explored. What is important is that size is clearly not critical among programs with at least the minimum faculty represented in our sample. Further, what is critical is that nationally recognized programs have at least one great person. Of the twenty great persons identified in this study, only one was not on the faculty of a nationally recognized program.*

It might be possible to interpret this finding to mean that only nationally recognized programs can recruit great persons. Of course there is an interrelatedness among the variables. In order to guard the confidentiality of our data, institutions and persons cannot be identified. We can say, however, that not all nationally recognized programs were recognized prior to the time they recruited their great persons. Further, not all great persons were likely to have been so designated when they first joined the institution where they are presently employed. It would seem that in the process of "becoming", great persons and nationally recognized programs often "become" together. Of course in this process the other major variable accounting for national recognition is also achieved (i.e., number of publications represented in the total faculty). It was also clear that on some faculties the great persons above account for the majority of publications represented on the entire faculty. Thus it appears that if publishing, like terracing, is required in order to go beyond the subsistence level -- then the great person (the one who will do

*This one great person was formerly in a program nationally recognized and later recruited by a program not nationally recognized. It would be interesting to see if that program increases in national recognition.

most of the work of publishing) is required for national recognition, just as the strong man is required to plant tobacco and make a profit.

It should be noted that the word great person was selected in this study recognizing that a person of either sex was capable of the hard work of a great person. The fact is, however, that all twenty persons so identified were male and that only three females were even nominated for the final go around. When one notes the very recent and perhaps still limited role of females in educational administration, and the fact that great persons tend to have been in their field for twenty years plus and in their present positions for ten years plus, this finding is not surprizing and certainly does not reflect or support a sexist conclusion regarding great persons.

Implications

A note of caution is required concerning possible implications and generalizations of this study. First our data were obtained only from graduate programs. Therefore, virtually nothing about undergraduate programs can be inferred for our data except by "great leaps" from the data. Next only graduate programs in educational administration were surveyed. While our conclusions concern only programs in educational administration, we are willing to speculate that there are many similarities among all types of graduate programs and that we can generalize, with caution, to most graduate programs. Finally we recognize that there are good programs in educational administration that are not UCEA programs. Our general knowledge of such programs leads us to believe that generalization to such programs, for our data, should pose little if any risk.

In the last section we developed conclusions about the data and attempted to stay close to the data itself. In this section we intend to take a larger step from the data. Here we intend to state what we believe are reasonable implications of the research for action if those concerned with the decision making process in a higher education institution should choose to develop nationally recognized programs.

Get a Great Person. Our data are very clear. A program will not be nationally recognized unless it has one or more great persons on the faculty. There are two ways to go about this (1) identify a person who has attained such a reputation and recruit the person; (2) identify three or so young persons who have demonstrated the ability to attain that reputation, recruit them, give them the encouragement to continue and assume that one or more will attain the reputation within about five years. The former road seems surer and quicker. The latter road requires more risk, more open positions (within a 2-3 year period) and at least as much in resources.

If a program has five or more persons already it would seem best to opt for the first alternative. If a program is building from three or so positions the latter alternative may make more sense. If the latter alternative is selected it would seem wise to select persons in their late thirties to early forties, who have had their degree for about ten years and have already begun to build an outstanding publication record.

Don't Worry About Faculty Size. It seems clear that the investment of resources in mere faculty size is counter-productive. One is tempted to say "If you want to soar over mountains don't ride dinosaurs." Put another way the saying "All of us are smarter than any one of us" just

does not seem to be true if one wants to build a national reputation. National reputation for departments rests on one or two great persons in the department to a much greater extent than it does on the total faculty. Additionally the other variable which together with "great persons" discriminates between the top and bottom programs (total faculty publications) often rests largely with the one or two great persons. In fact it appears the only reason total faculty publications enters at all is that, in some few cases (where great persons have assumed administrative or other responsibilities) their publications in the last five years have fallen off -- but their total publications remain high. Thus the publications of others (perhaps future great persons) account for a reasonable percentage of total faculty publications.

Is It Worth the Investment? This is a difficult question to answer in absolute terms. It is said that when asked the question, "Ten years from now would you rather be making $50,000/year or be chosen to be included in 'Who's Who?'" -- a significantly greater number of academics as opposed to others chose the latter. It was worth it to them. Our data do not lend themselves to an analysis of the question of whether the actual dollar investment in becoming a nationally recognized department pays off in dollars returned. It is possible that one only gets back 98 cents on the dollar or one may actually get $1.25 on each dollar. We do know the nationally recognized departments get a greater share of the training and research grants as well as the fact that they invest more money in faculty salaries than nonrecognized departments. We also know there is a greater range of faculty salaries within those departments than in departments ranked lower in the field.

Our data also indicate how to become nationally recognized as a department if that is the choice one makes. Perhaps future research can tell us something about the relationship between nationally recognized departments and nationally recognized colleges and the universities that house those colleges. We would speculate that there are no nationally recognized colleges that do not have nationally recognized departments nor are there nationally recognized universities without nationally recognized colleges. The question, "What price greatness and what worth?" -- goes beyond a dollar and cents answer. We feel safe in speculating, however that while, like planting tobacco in Paso, national recognition might not produce a profit (it is still a risk) obtaining national recognition is the only chance one has "to make an academic profit" and mere subsistence seems to us a miserable way to live.

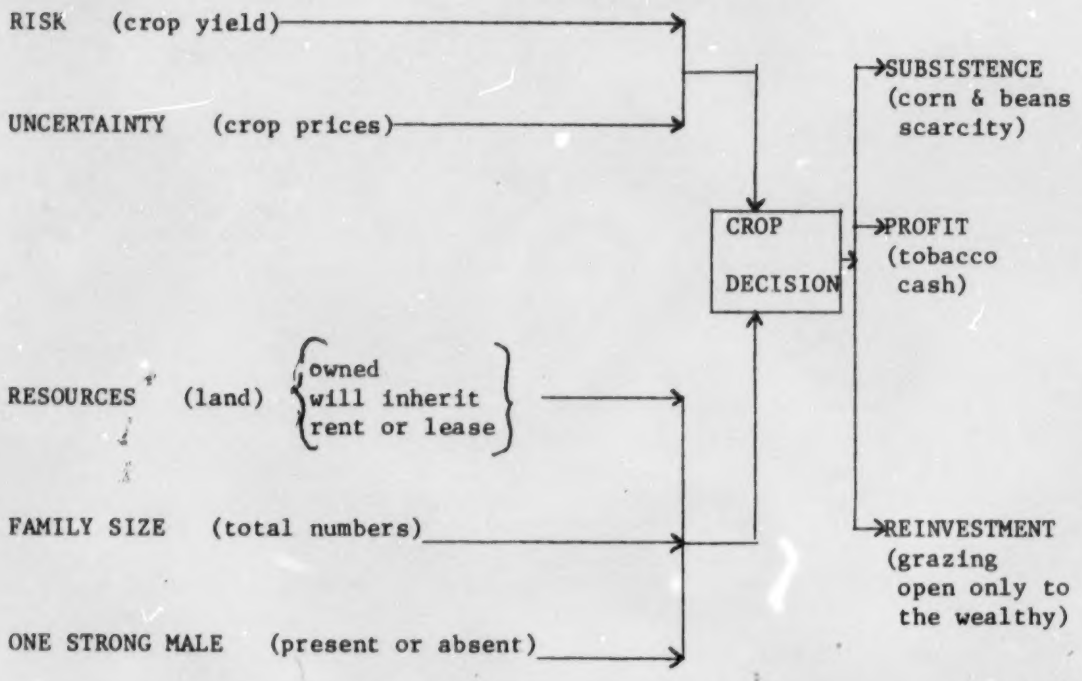

Figure 1: Barlett's Operational Model

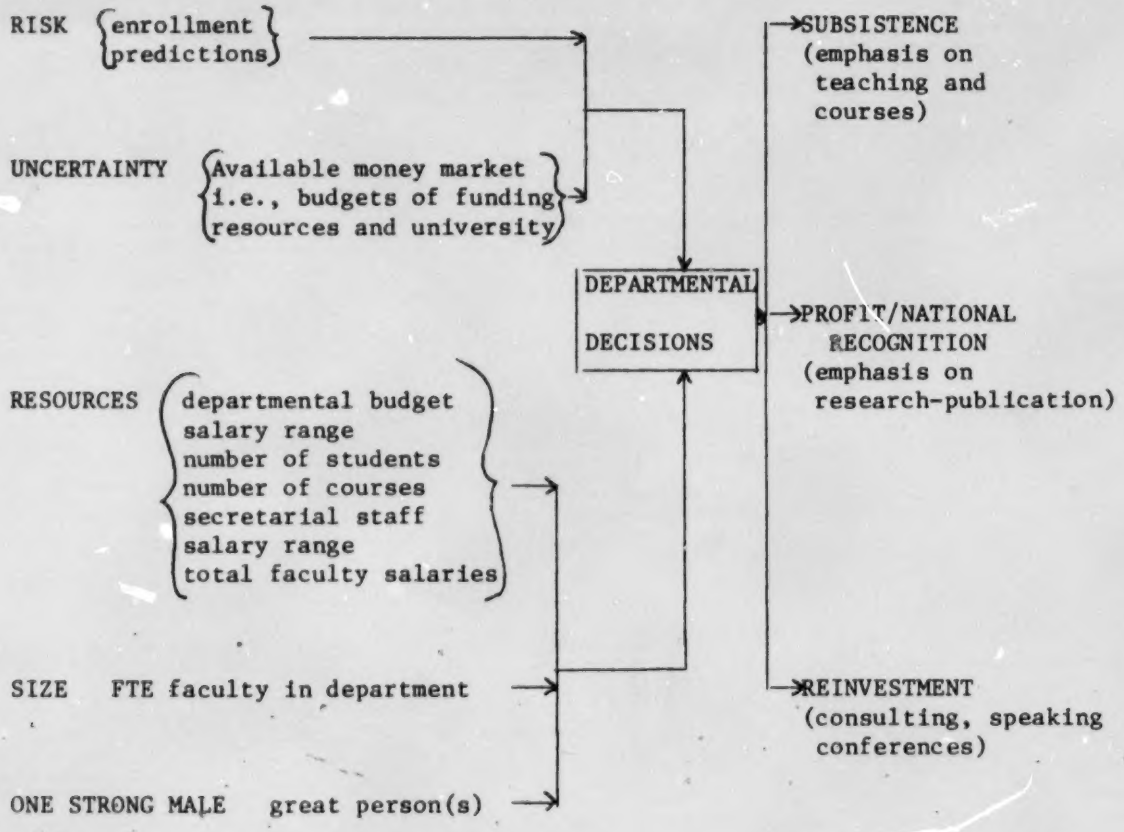

Figure 2: Barlett's Model Applied to Program National Recognition

TABLE I

VARIABLES RELATED TO DEPARTMENT NATIONAL RECOGNITION

Step Entered	Variable	R	R^2	Beta Weight Step 7+
1	Number of Publications of Total Faculty	.74	.55	-.304
2	Number of Great Persons (1 or more)	.80	.63	-.432
3	Number of Doctoral Candidates in Residence	.84	.70	-.331
4	Number of FTE Faculty	.85	.73	.98
5	Amount of Faculty Salaries+	.90	.81	-.90
6	Range of Faculty Salaries*	.92	.85	-.19
7	Number of Different Courses**	.93	.86	-.15

*Significant at or beyond .01

**Significant at .05

+The negative beta weights are the result of the fact that the highest ranked nationally reputed program was 1, the next 2, . . . to 47. Thus for example the higher the rank (i.e., the smaller its rank number) the larger the total of faculty publications resulting in a negative beta weight.

TABLE II

RELATIONSHIP BETWEEN NATIONAL RECOGNITION, GREAT PERSON, AND GRANT MONIES

Input Variable \ Type of Grant	Research Grant Amount	Training Grant Amount
National Recognition	-.473*	-.542*
Great Person	.537	.359

NOTE: All zero order correlation are significant at or beyond .01

*The negative correlations result from the fact that the highest ranked program was 1 while the lowest ranked program was 47.

TABLE III

MAJOR AREA OF STUDY OF GREAT PERSONS

Major Areas of Study \ Degree	BS/BA	MS/MA	Doctorate
Educational Administration	---	53%	79%
History	45%	12%	---
Education	25%	18%	---
Social Science	15%	12%	11%
Math/Statistics	10%	6%	11%
Public Administration	5%	---	---
Total	100%	101%*	101%*

*Additional percentage points are a result of rounding error.

TABLE IV

MAJOR ACTIVITIES ENGAGED IN BY GREAT PERSONS

Activity \ Rank	1	2	3	4	5	Total%
Research	47%	5%	21%	16%	11%	100%
Teaching	21%	58%	5%	11%	5%	100%
Service Professional	16%	5%	42%	32%	5%	100%
Organization	5%	0%	16%	32%	47%	100%
Other	10%	32%	11%	5%	42%	100%

NOTE: Numbers indicate the percent of the total number of great persons choosing the activity according to the amount of time each spent in the activity, where 1 = spend most time and 5 = spend least time.

Only 19 of the 20 great persons responded to this question.

APPENDIX A

SUMMARY TABLE OF MULTIPLE REGRESSION ANALYSIS EQUATION USING SEVENTEEN VARIABLES

VARIABLE	MULTIPLE R	R SQUARE	BETA
Number of Publications*	0.74479	0.55471	-0.28291
Amount of Teaching Grants*	0.82125	0.67444	-0.17730
Number of Doctoral Candidates*	0.85199	0.72588	-0.33839
Number of Great Persons*	0.88381	0.78112	-0.44157
Number of Different Courses Taught*	0.89750	0.80551	-0.21097
Average Number of Courses/FTE Faculty*	0.90971	0.82757	0.03490
Number of FTE Secretaries**	0.91698	0.84085	0.11662
Number of Masters Students	0.92048	0.84729	-0.04005
Support (1 = Public; 2 = Private)	0.92346	0.85277	0.06383
Faculty Salaries	0.92760	0.86045	-0.85366
Number of FTE Faculty Members	0.94383	0.89082	0.87445
Range of Faculty Salaries	0.94876	0.90014	-0.16657
Departmental Budget	0.95232	0.90691	-0.10742
Emphasis of Department***	0.95285	0.90792	-0.06542
Enrollment	0.95314	0.90848	0.04028
Doctoral Candidates in Residence	0.95341	0.90900	0.04186
Amount of Research Grants	0.95352	0.90920	-0.02157

* Significant at the .01 level
** Significant at the .05 level
*** Emphasis was numerically coded as follows: 1 = research; 2 = service; and 3 = teaching

APPENDIX B

GREAT PERSONS: BIOGRAPHICAL AND ACADEMIC INFORMATION

VARIABLE	MEAN*	MEDIAN	RANGE
Age	53.8	53.5	40-71
Years in Present Position	11.7	11.0	3-26
Age When Degree Was Received:			
BS/BA	22.8	22.5	19-26
MS/MA (17)**	26.9	27.0	23-35
Doctorate (19)	32.1	33.0	25-39
Number of Institutions From Which Each Person's Degrees Were Received: 1 = 5 People; 2 = 9; and 3 = 6			
Number of Years in Previous Positions	21.7	21.5	7-40
Previous Positions (number in parentheses represents the number of respondents who held that type of previous position):			
Public School (16)	6.1	5.0	2-13
Higher Education (20)	23.1	23.0	8-34
State Education Agencies (4)	2.2	2.0	1-6
Federal Education Agencies (3)	4.0	4.0	
Armed Forces (3)	3.0	3.0	2-4
Other (5)	3.3	3.0	1-9
Publications (last five years):			
Books (19)	1.3	1.0	0-4
Chapters (19)	3.5	4.0	0-12
Monographs (19)	2.7	1.0	0-13
Articles (19)	8.3	6.0	0-25
Conference Papers (19)	6.6	5.0	0-30
Reviews (19)	.9	0	0-8
Total Publications (19)	23.3	19.0	4-61

APPENDIX B con't.

VARIABLE	MEAN*	MEDIAN	RANGE
Conferences/Meetings Attended (last five years):			
Regional (16)	5.3	3.5	0-20
National (16)	9.3	8.0	2-20
Total (16)	14.6	11.5	2-40
Number of Different Courses Taught	2.7	3.0	0-6
Total Number of Courses Taught	3.5	4.0	0-9
Program Timing: Semester = 9 people; Quarter = 8; and Year Long = 1			
Courses Initiated:			
Last Five Years	1.3	1.0	0-5
Previous Five Years	1.3	0	0-8
Total	2.5	10.0	0-13
Number of Students for Whom Great Person is Present Dissertation Advisor	7.3	5.5	0-20
Number of Students Who Received Degrees in Last Five Years For Whom Great Person Was Dissertation Advisor	9.6	6.5	0-27

* Means are rounded to tenths.
**Number in parentheses represents the number of respondents if less than 20.

REFERENCES

Cancian, Frank. Change and Uncertainty in a Peasant Economy. Stanford: Stanford University Press, 1972.

Coleman, James S., "The University and Society's Demands Upon It", Context and Content: Essays on College Education, ed. by Carl Kaysen (New York: McGraw-Hill Book Co., Inc., 1973), p. 363.

Cartter, Allan Murray. An Assessment of Quality in Graduate Education. Washington, D.C.: American Council on Education, 1966.

Dolan, W. Patrick. The Ranking Game: The Power of the Academic Elite. Lincoln, Nebraska: Study Commission on Undergraduate Education and the Education of Teachers, 1976.

Firth, Raymond, ed. Themes in Economic Anthropology. ASA Monograph, No. 6. London: Tavistock, 1967.

Hartman, Lawton M. Graduate Education: Parameters for Public Policy. Washington, D.C.: U.S. National Science Foundation, 1975.

House, Ernest R. The Politics of Educational Innovation. Berkeley: McCutchan Publishing Corp., 1974.

Hughes, R. M. Report of the Committee on Graduate Instruction. Washington, D.C.: American Council on Education, 1934.

Hughes, R. M. A Study of Graduate Schools of America. Oxford, Ohio: Miami University, 1925.

Jencks, Christopher, and Riesman, David. The Academic Revolution. Garden City, NY: Doubleday and Co., Inc., 1968.

Johnson, Allen. Sharecroppers of the Sertao. Stanford: Stanford University Press, 1971.

Keniston, Hayward. Graduate Study and Research in the Arts and Sciences at the University of Pennsylvania. Philadelphia: University of Pennsylvania Press, 1959.

Roose, Kenneth. Fifty Top-Rated Institutions: Their Role in Graduate Education. Berkeley: University of California, Center for Research and Development in Higher Education, 1971.

Schultz, Theodore W. Transforming Traditional Agriculture. New Haven: Yale University Press, 1964.

PERIODICALS

Barlett, Peggy F. "The Structure of Decision Making in Paso," American Ethnologist, 4 (May 1977), 285-307.

Hagstrom, W. O. "Inputs, Outputs, and the Prestige of University Science Departments," Sociology of Education, 44 (Fall 1971), 375-397.

Higgins, Stephen A. "Quantity and Quality of Doctoral Overproduction," Educational Record, 52 (Summer 1971), 262-266.